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摘要：采用水热法成功合成板钛矿型TiO<sub>2</sub>纳米颗粒。利用X射线衍射仪、透射电子显微镜、拉曼光谱仪、激光粒度分析仪对样品进行分析表征，结果表明TiO<sub>2</sub>纳米颗粒为棒状，直径约为10nm，长度约为100nm。发现所合成的样品随着反应时间，其长度有明显的增加，而直径没有明显的变化。

关键词：TiO<sub>2</sub>, 板钛矿型, 纳米棒

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### Hydrothermal synthesis and characteristics of brookite TiO<sub>2</sub> nanoparticles

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Abstract: Brookite TiO<sub>2</sub> nanoparticles have been successfully synthesized by hydrothermal method. The morphology and the crystalline structure of nanoparticles were characterized by Transmission electron microscopy (TEM), X-ray diffraction (XRD), Raman spectrum and 3000HSA analyzer (MALVERN), respectively. The result indicate that the TiO<sub>2</sub> nanorods with an average diameter of 10nm and 100nm longness. It was found that the longness of TiO<sub>2</sub> nanorods increase as increasing the reaction times, while the diameter does not show any change.

Key words: TiO<sub>2</sub>, Nanorods, Brookite

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